DESIGN/BUILD BROADBAND DEPLOYMENT
ESTABLISHED 1996
1700 S Peachtree Road
Balch Springs, TX 75180
Broadband.Networks@BSICable.com

COMMENTS – NBP Public Notice #2

GN Docket Nos. 09-47, 09-51, 09-137

Commissioners Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Friday, October 2, 2009

On behalf of all the employees of Broadband Specialists, Inc. (BSI), I congratulate the FCC for this creative, accessible and open process for submitting comments regarding the development of the National Broadband Plan as it relates to smart grid technology and deployment. BSI, a Texas Corporation, is a full service telecommunication network construction firm, specializing in outside plant (OSP and inside plant (ISP) design and deployment. The upper management at BSI has over 570 years experience building and maintaining voice, video and broadband network infrastructure. Founded in 1992, incorporated in 1996, BSI has completed hundreds of networks for clients including Time Warner Cable, AT&T, Verizon Business, Time Warner Business, Suddenlink Communications, Avenue Broadband, Allegiance Communications, and Comcast Communications. BSI provides the same services to small businesses, non-profits, government entities and community anchor institutions. With over thirty years experience designing and deploying fixed-wired infrastructure of many types and that perform many functions all over the United States, I respectfully offer these comments and opinions for your consideration on behalf of the company. My comments are brief and mostly limited to issues directly related to the networks. Specifically, recommendations regarding the network architecture to be deployed as part of the 2009 ARRA and the networks ability to support smart grid with the least number of technical hurdles, and in the most economical way in regards to network deployment, operations, maintenance, environment and job creation.

Broadband & Smart Grid:

BSI advocates the combining of broadband and smart grid on 2009 ARRA projects. Specifically, BSI advocates that all broadband networks deployed under the Act be smart grid capable and compatible.

Smart grid is the convergence of information and operational technology applied to the electrical grid that will allow long-term sustainable options to end users along with increased reliability, efficiency, and security for utilities. Smart grid provides long-term benefit for ecosystems. End users and utilities alike see economic benefits through deployment of smart grid automated metering technology (AMI) technology. On the demand side, users may reap benefits from "prices to devices" by utilizing home area networks (HAN) to control appliances. Utilities reap benefits provided by flow management. New battery technology for electric power vehicles enables users to charge vehicle batteries and store energy while prices are lowest, and return the unused energy to the grid during peak usage periods.

Telecommunication service providers and electric service providers see recurring revenue stream which will add another element of sustainability, especially in the difficult rural business model. For the telecommunication network operator, through lease of fiber for connectivity for distribution automation (DA), and for the utility through cost savings derived from smart grid technologies. Utilities and telecommunication service providers alike will be able to invest cost savings right back into the network, as well as profits derived from the benefits of the additional revenue stream. For example, electric utilities may become a service provider of video, broadband and voice over internet protocol (VoIP). Telecommunication firms may share in the benefits derived from utilizing existing "dark fiber" for smart grid purposes, and as an additional revenue stream.

BSI recommends that when deploying fiber to the home (FTTH), fiber to the premise (FTTP), or fiber to the curb (FTTC), or backhual architecture, additional "dark" fiber is built into the networks to accommodate immediate or future smart grid utilization by electric utilities and rural electric co-ops for distribution mission critical automation devices and automated metering connectivity.

BSI recommends that priority be given to any BIP/BTOP applicants who incorporate into their network architecture a smart grid capability. For the funds within the Act, huge economic savings can and will be realized by combining the broadband network with the smart grid network capabilities for future utilization.

BSI encourages the National Telecommunications and Information Administration (NTIA), Rural Utilities Service (RUS), and the Department of Energy (DOE) to work together to create a sustainable and non discriminatory

regulatory and economic development environment conducive to creating this most important synergy.

BSI recommends the "dark" fiber capacity mentioned above be built into the network whether an operating agreement has been completed at time of broadband deployment or not, since the majority of the cost of fiber is in the sheath, and the cost of additional fiber is minimal while the future smart grid and the other economic development benefits are dynamic.

Suitability of Communications Technologies:

Benefits of using wireless to handle smart grid data transmissions:

Smart grid data transmission does not require a large amount of bandwidth. Generally, the bandwidth required is less than that required to place a VoIP call. The impact over a large network with multiple home devices updating power usage would be relatively low. Wireless provides the ability to transmit power consumption data over moderate distances without the cost of physical infrastructure build out. It is our opinion that using wireless for communication between electric utility end users and the 'grid' would be the most cost effective. The low voltages in the premise and transmission lines to the house would cause less interference and noise in the medium than in other locations across the electrical power grid.

Hazards of using Wireless for smart grid data transmission:

It is well known that high voltage transmission lines, transformers, sub-stations and power generation plants create large electromagnetic fields, as well as electrostatic fields. This has the effect of introducing "noise" into transmission lines, as well as wireless transmission signals. If the equipment for wireless isn't shielded properly and the high and low voltage lines aren't properly maintained, the use of wireless would become completely ineffective. While the low voltage environment at the home would be conducive to use of wireless for smart grid at the home, the "noise" introduced to the wireless network in the grid along the higher voltage transmission and distribution lines would not be conducive to the "mission critical" operations required to mange distribution automation on the grid.

In rural and remote areas of the country, due to less available revenue for maintaining power lines and components, the wireless solution becomes even more impractical.

Why we recommend Fiber Optic lines:

For substation and power generation facilities the best option is fiber optic allowing for HD remote surveillance of premises and high speed real time data transfer with limited electromagnetic interference to the transport medium. As mentioned above, fiber is also seamlessly supportive for monitoring of transformers on high voltage lines. The electromagnetic and electrostatic fields

would have no effect on the light wave transmission of data, and would not be inducted into the fiber itself, unlike copper lines and possibly improperly shielded wireless equipment.

It is my sincere hope that these comments bring value to your decision making process as you formulate your best strategies for integrating smart grid capabilities into the existing and future broadband infrastructure.

Sincerely,

Gerry Locke - President/CEO
Toll Free 877.559.0531
www.bsicable.com
www.broadbandfleetservices.com
broadband.networks@bsicable.com